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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 09/788,503 | 02/21/2001 | Hideki Tanaka | 00N033-US | 6750 |

21254 7590 03/27/2003

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EXAMINER

NGUYEN, KHIEM D

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2823

DATE MAILED: 03/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/788,503

Applicant(s)

TANAKA, HIDEKI

Examiner

Khiem D Nguyen

Art Unit

2823

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 and 13-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 and 13-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 February 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5, 8. 6) ☐ Other:

DETAILED ACTION

The non-final rejection as set forth in paper No. (9) is withdrawn in response to applicants' amendments.

A new rejection is made as set forth in this Office Action.

Claims (1-11 and 13-27) are pending in the application.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 6, 8, 10 and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 6, 8, 10 and 25 recite the limitation "substantially perpendicular" the term "substantially" is often used in conjunction with another term to describe a particular characteristic of the claimed invention. It is a broad term. In re Nehrenberg, 280 F.2d 161, 126 USPQ 383 (CCPA 1960).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 and 13-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over the applicant's admitted prior art (AAPA) of this application in view of

Japanese Laid Open Patent Publication (JLOPP) Hei 6-196609 and Kim et al. (U.S. Patent 6,016,176).

AAPA teaches a tape carrier type semiconductor device comprising (See Description of the Related Art on pages 1-2 of this application and FIGS. 10A-B):

a flexible substrate 62 (page 1, line 11) on whose surface wiring is formed wherein the flexible substrate comprises a resin on a first side of the flexible substrate wherein the resin including a first heat expansion coefficient and a solder resist on a second side of the flexible substrate wherein the solder resist including a second heat expansion coefficient (page 1, line 22 to page 2, line 3);

a driver circuit 63 which is mounted on the flexible substrate and drives a device connected to the flexible substrate (page 1, lines 11-12);

the flexible substrate includes a plurality of first slits 66 (page 1, line 13) such that the first slit comprises a first sub-slit and a second sub-slit (FIG. 10A-B) wherein the first slits comprises a stress-releasing slit 67 (page 1, line 13) and wherein the flexible substrate comprises a terminal area adjacent the first slits (page 1, lines 15-17) such that the first slits is situated between the driver circuit and the terminal area wherein the first slits comprises a rectangular shape with a longitudinal side parallel to the terminal area (FIGS. 10A-B); and

wherein the flexible substrate includes a second slit for folding the tape carrier type semiconductor device.

AAPA fails to explicitly disclose wherein the first slit (or plurality of first slits) having a connector (or plurality of connectors) situated intermediate thereto

for connecting both sides of the first slit to reduce warpage as recited in present claims 1, 10 and 13.

JLOPP discloses the flexible substrate includes a plurality of slits having multiple connectors situated intermediate thereto for connecting both sides of the slits to prevent warping of the substrate (Citation 2, lines 1-10). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of AAPA and JLOPP to enable the first slits of AAPA to be formed.

AAPA fails to explicitly disclose wherein the flexible substrate includes a rib formed “substantially” perpendicular to the plurality of the first slits as recited in present claims 6, 10 and 17.

Kim discloses the flexible substrate 32 includes a rib 34 formed “substantially” perpendicular to the plurality of slits 18 (col. 3, lines 16-30 and FIGS. 1-5d). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teaching of AAPA, JLOPP and Kim to enable the rib of AAPA to be formed.

None of the references explicitly discloses the warpage percentage of the tape carrier type semiconductor device as recited in present claim 24. However, there is no evidence indicating that the warpage percentage of the tape carrier type semiconductor device is critical and it has been held that it is not inventive to discover the optimum or workable percentage of a result-effective variable within given prior art conditions by routine experimentation. See MPEP 2144.05.

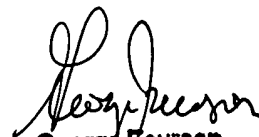
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khiem D Nguyen whose telephone number is (703) 306-0210. The examiner can normally be reached on Monday-Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chaudhuri Olik can be reached on (703) 306-2794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 746-9179 for regular communications and (703) 746-9179 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

K.N.
March 21, 2003


George Fourson
Primary Examiner
2823